

The Quiet Rotary Power and Information Transformer Converter, Phase I

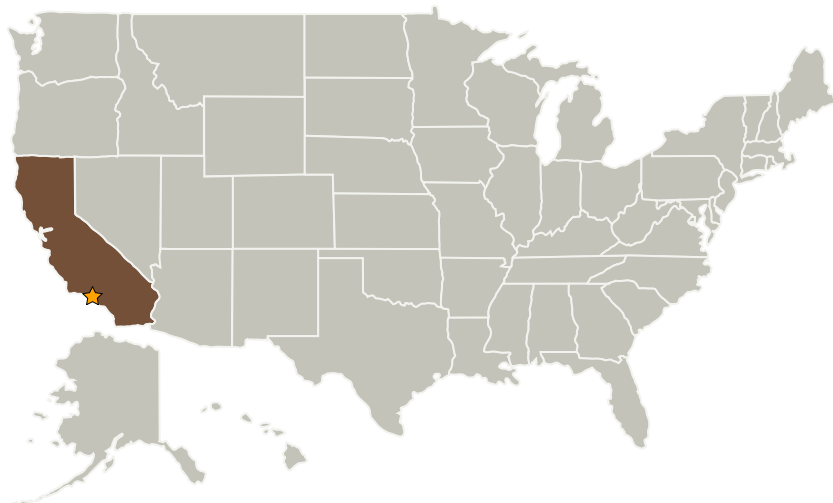
Completed Technology Project (2004 - 2004)



Project Introduction

Many satellites, spacecraft, and radar antennas with spun and de-spun configurations require the transfer of power across rotating interfaces in lieu of slip rings and/or flexures. This is particularly true for systems that have to demonstrate a long life expectancy. The rotary transformer has desirable characteristics of high reliability and low noise, which qualify it as a viable replacement for slip rings. The rotary transformer is essentially the same as a conventional transformer, except that the geometry is arranged so that the primary and secondary can be rotated with respect to each other with negligible changes in electrical characteristics. The power transfer is enabled by magnetic coupling across an air gap. There are not any wearing contacts, noise or contamination problems due to lubrication or wear debris. The development of a rotary power transformer will use the same ?Quiet Converter? technology that was used on WF/PC-II, Articulated Fold, Mirror Actuators (Hubble Space Telescope), MISR and Mars 05 Op-Nav Camera.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Jet Propulsion Laboratory (JPL)	Lead Organization	NASA Center	Pasadena, California
Kg Magnetics, Inc.	Supporting Organization	Industry	Idyllwild, California



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

California

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Colonel Mclyman

Technology Areas

Primary:

- TX01 Propulsion Systems
 - └ TX01.3 Aero Propulsion
 - └ TX01.3.1 Integrated Systems and Ancillary Technologies